USSR

UDC 632.952

KUKALENKO, S. S., and DVOYCHENKOVA, E. A., All-Union Scientific Research Institute of Chemical Plant Protectants

"New Systemic Fungicides (Survey of Soviet and Foreign Literature)"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 6, 1971, pp 31-37

Abstract: The article reviews work done in the field of the 1,4-oxathiin derivatives (Vitavax, Plantvax, Sidvax and G-696). The authors deal almost exclusively with the foreing literature. The only Soviet reference is to I. M. POLYAKOV et al., who established that the development of brown rust of wheat decreases in direct relation to the exposure time for seeds in a solution of Vitavax and the content of the active ingredient. In plot experiments seeds immersed in a one-percent solution of the chemical for 60 minutes showed four times less rust than control. The article considers the mechanism of the systemic fungicidal action of 1,4-oxathiin derivatives.

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UDC: 632.934.1

KUKALENKO, S. S., and DVOYCHENKOVA, E. A., All-Union Scientific Research Institute of Chemicals for Plant Protection

"Fungicide Properties of Benzimidazole Substitutes"

Moscow, Khimiya v Sel'skom Khozyaystve, no 11, Nov 70, pp 36-41

Abstract: A review is presented of 85 reference items on the fungicide properties of benzimidazole substitutes, namely thiabendazole, furydazole, and benlat. Extensive laboratory and field tests show thiabendazole to have a wide spectrum of fungicide systemic effects against a multitude of vegetative plant and fruit diseases during the post harvest period. The compound is particularly active against the green mould of citrus fruits -- *Penicillium digitatum*, *Diplodia natalensis*, *Penicillium italicum*, *Penicillium expansum*, and others. Furydazole in mixture with hexachlorobenzene is a component of voronit which is widely used abroad as a desinfectant for treating wheat and rye grain against *Fusarium nivale* causing snow mould and the common bunt of wheat. Benlat is the most promising of all known systemic fungicides. Its specific characteristics are the

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KUKALENKO, S. S., et al, Khimiya v Sel'skom Khozyaystve, no 11, Nov 70, pp 36-41

absence of phytotoxicity and a very low toxicity to warm-blooded animals. Its fungicide activity in vitro correlates well with that in vivo in plant diseases with the same pathogens. Further studies on the properties and the mechanism of the action of benzimidazole derivatives will undoubtedly be of great theoretical and practical value.

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USSR

UDC 620.18:669.71

PORTNOY, K. I., LEVINSKIY, YU. V., SALIBEKOV, S. YE., DVOYCHENKOVA, L. V., and TREFILOV, B. F., Moscow

"Using the Titanium Nitride as a Diffusion Barrier in Nickel-Base Composite Materials"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 3, May/Jun 73, pp 122-126

Abstract: The aim of this work was to design a commercial unit for the continuous coating of tungsten and molybdenum wire with titanium nitride and to study the behavior of these wires in a nickel matrix. The unit employs a mixture of hydrogen and nitrogen which passes into the reaction vessel and is mixed with titanium chloride. Tungsten (molybdenum) wire is drawn through the reaction vessel while heated by an electric current passing through it. The titanium tetrachloride undergoes reduction on a heated wire surface, with a simultaneous formation of titanium nitride. The optimal coating temperature was 1100°C, with a deposition rate of 0.5 μ/sec. This method makes it possible to produce coatings 3-6 μ thick on wires 300 and 310 μ thick. Titanium nitride coatings of this thickness almost completely stopped the penetration of tungsten into nickel at 1200°C and molybdenum into nickel at 1200°C during a 100-hr exposure. The strength of tungsten and molybdenum wire with titanium nitride coatings after annealing in a nickel matrix at 1000-1200°C for 1, 10, 100 hours was considerably higher that of a similar wire without the coating.

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USSR

UDC 669.71

LEVINSKIY, YU. V., CHUBAROV, V. M., ROMANOVICH, I. V., and DVOYCHENKOVA, L. V.

"Interaction of Tungsten and Molybdenum Wires With Nickel in the Composite Material"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar/Apr 73, pp 113-119

Abstract: Composite samples were prepared by hot pressing of nickel powder (carbonyl nickel) with either tungsten or molybdenum wire at 1000°C for 1-2 min. Samples prepared in this way were subjected to annealing in vacuum ($\sim 1 \cdot 10^{-4}$ mm Hg) at 1100-1250°C up to 100 hours. No interaction was detected between W or Mo wires with Ni powder immediately after pressing. However, a wide interaction zone produced by diffusion processes was present in all samples after annealing. In the case of tungsten the diffusion zone contained a solid solution of W in Ni, and in the case of Mo, a solid solution of Mo and Ni and an intermetallide layer. However, if wires were not carefully cleaned from the graphite lubricant, the contact zone contained up to three layers of complex carbides. The x-ray spectral analysis of the concentration of W and Mo in carbide layers and their microhardness indicated that their number and composition depends on heat treatment and on the extent of graphite impurity on the wires. The maximum concentration of W and Mo in the solid

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LEVINSKIY, YU. V., et al., Fizika i Khimiya Obrabotki Materialov, No 2, Mar/Apr 73, pp 113-119

solution layer within the contact zone was ~ 38 and ~36%, respectively, regardless of the presence or absence of carbide layers. The diffusion coefficient of W in Ni at 1100 and 1200°C was $(6.0\pm1.0)\cdot10^{-12}$ and $(3.1\pm0.5)\cdot10^{-11}$, respectively. For Mo it was $(3.1\pm0.95)\cdot10^{-11}$, $(5.7\pm1.0)\cdot10^{-11}$, and $(9.4\pm1.5)\cdot10^{-11}$ at 1100, 1200, and 1250°C, respectively. Diffusion of Ni in W and Mo was negligible because of very low solubility of Ni in these metals.

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USSR UDC 546.78:620.172.2

CHUBAROV, V. M., LEVINSKIY, YU. V., SALIBEKOV, S. YE., TREFILOV, A. F., GRACHEV, L. V., RODIN, YE. M., LEVINSKAYA, M. KH., DVOYCHENKOVA, L. V., Moscow

"Heat-Resistant Composition Material Based on Nickel"

Kiev, Problemy Prochnosti, No 7, 1971, pp 100-104

Abstract: Results are presented from development of the VKM-1 composition material constructed on the basis of the heat-resistant ZhS6-K nickel alloy reinforced with tungsten wire. Data are presented from metallographic and microradiographic studies of the compatability of the matrix with the fiber indicating insignificant interaction of the ZhS6-K alloy with the tungsten even after holding for 100 hours at a temperature of 1,200° C.

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USSR UDC 537:226:537:311:33]:538

KRYLOV, Ye. I., ROZHDESTVENSKIY, F. A., PILIPENKO, G. I., DVOYNIK, V. I.

"Magnetic Properties of Orthotantalates of Transition Metals in 3d-Series"

Tr. In-ta khimii. Ural'skiy fil. AN SSSR, [Works of the Institute of Chemistry, Urals Affiliate, Academy of Sciences, USSR], No 17, 1970, pp 68-71, (Translated from Referativnyy Zhurnal Fizika, No 10, 1970, Abstract No 10 Ye 1131, from the resume).

Translation: The magnetic susceptibility of titanium and vanadium orthotantalates is measured in the 90-300°K temperature interval. EPR spectra of polycrystalline specimens of orthotantalates of titanium, vanadium, chromium, and iron are measured. Values of g-factors are also determined. Suggestions are made concerning the valence states of ions of the transition metals in the 3d-series forming compounds such as $MeTaO_4$.

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USSR UDC 582.288:581.2:634.956(477.234)

TRYBUN, P. A.; DVOYNOS, L. M.; DEMCHAK, I. I.; Carpathian Branch, Ukrainian Scientific Research Institute of Forest Management and Agricultural and Forest Melioration; Institute of Microbiology and Virology, Academy of Sciences Ukrainian SSR

"Species Composition of Fungi That Cause Diseases of Tree Seedlings in Nurseries of Ivanovo-Frankovskaya Oblast"

Kiev, Ukrainskiy Botanicheskiy Zhurnal, Vol 28, No 4, Jul/Aug 71, pp 511-514

Abstract: As a part of a study of fungus infections of trees in the forests of the Ukrainian Carpathians, a phytopathological investigation of tree nurseries of the State Forest Reserve in Ivanovo-Frankovskaya Oblast was carried out in 1968-70. It was established that seedlings of pedunculate oak (Quercus robur) were infected with powdery mildew caused by Microsphaera alphitoides; those of European beech (Fagus sylvatica) were infected with Pestalozzia hartigi and Fusarium javanicum; and those of

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TRYBUN, P. A., et al, Ukrainskiy Botanicheskiy Zhurnal, Vol 28, No 4, Jul/Aug 71, pp 511-514

oriental beech (Fagus orientalis) with Pestalozzia hartigi and Fusarium avenaceum. Sweet cherry (Prunus avium) seedlings were infected with coccomycosis caused by Coccomyces hiemalis. Root rot of coniferous and deciduous species was caused by eight species and various genera of Fusarium. In addition to being affected by fusariosis, seedlings of Scotch pine (Pinus sylvestris) were infected with a disease caused by Melampsora pinitorqua.

DVOYRIN M. S

Acc. Nr: AP0052454 Ref. Code: UR0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 2 , pp58-61

CHEMOTHERAPY OF PATIENTS WITH CHRONIC DESTRUCTIVE PULMONARY TUBERCULOSIS IN OUT- AND IN-PATIENT CONDITIONS

G. S. Fedoseyev , M. S. Dvoyrin, and A. L. Karlova (Kiev)

The problem is discussed of improving chemotherapy of patients with chronic destructive pulmonary tuberculosis in out-patient and in-patient conditions of treatment.

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USSR UDC 632.95

NEL'NIKOV, N. N., SOKOLOVA, YE. M., TRUNOV, P. P., VOLKOVICH, S. D., UYUSHKINA, G. M., GOLYSHIN, N. M., ABELENTSEV, V. I., UKHAIMIS, N. S., FEDOSEYENKO, L. G., SAIKIN, B. A., DVUKHSHERSTOV, N. G., VISHNEVETSKAYA, A. M., ORLOV, S. I., ZAVISION, A. P., and TALASH, A. I.

"Polycarbazin"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 95-104 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N503 by T. A. Belyayeva)

Translation: The effectiveness of polycarbazin (I) on apple scab and grapevine mildew equals that of zineb (II) and polyram-combi, while on cherry-fruit gray rot it equals Bordeaux liquid (III) (1 percent), but is ahead of II. I equals II and III for Clasterosporium infection of the cherry plum and tomato macrosporiosis. The decisive factor which determine the length of action of I is precipitation, which washes thepreparation off plants.

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USSR

UDC 632.95

PYATKOVA, YU. B., GOLUBEVA, V. A., GOLYSHIN, N. M., UKRAINETS, N. S., ABELENTSEV, V. I., FEDOSENKO, L. G., VISHNEVSKAYA, A. M., PUSTOVOYTOVA, V. I., and DVUKHSHERSTOV, M. G.

"Editone"

Khim. sredstva zashchity rast. (Chemical Means of Protecting Plants -- collection of works), Issue 1-M, 1970, pp 129-134 (Referativnyy Zhurnal -- Khimiya, No 10, (II), 1972, Abstract No 10H550 by T. A. Belyayeva)

Translation: Investigation of editone -- 3,3'ethylene-bis-4,6-dimethyltetrahydro- 1,3,5-thiadiazinth-2-one (I) -- in laboratory conditions in vitor showed that I is equivalent in fungicidal property to Phygon and offers no threat to green plants. The effectiveness of I in countering spple scab, grapevine mildew, cherry-plum Clasterosporium, monilial blight, grey mold of cherry trees, and Macrosporium in tomatoes is equal to or exceeds the effectiveness of zineb and copper oxychloride (concentration 0.25-0.125%) and of Bordeaux mixture in 1% concentration. I is not effective in combatting powdery mildew.

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USSR

UDC 632.95

GOLYSHIN, N. M., ABELENTSEV, V. I., DVUKHSHERSTOV, N. G., MEL'NIKOV, N. N., VOLODKOVICH, S. D., TRUNOV, P. P., DYMSHAKOVA, G. M., NOVIKOVA, V. A.

"Fungicide Mix"

USSR Author's Certificate No 250600, filed 28 Mar 68, published 16 Jul 71 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6N624)

Translation: Ethylenethiuramdisulfide (13-40%) is added to a fungicide mix containing ethylenebisdithiocarbamates of Zn (36-55%) and Mn (20-35%) for simultaneous control of several plant diseases. The preparation can be used for preplant treatment of the seed of bean and vegetable crops with consumption norms of 6-10 grams/kg of feed.

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1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EFFECTIVENESS OF THE USE OF DITHIOCARBAMATES TO COMBAT THE PERONOSPOROSIS OF TOBACCO IN VARIOUS PHASES OF SEEDLING FORMATION -U-

AUTHOR-(03)-ABELENTSEV, V.I., GOLYSHIN, N.M., OVUKHSHERSTOV, M.G.

COUNTRY OF INFO--USSR

D

SOURCE--KHIM. SEL. KHOZ. 1970, 8(2), 117-18

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--THIOCARBAMATE, PLANT DISEASE, DISEASE CONTROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1375 STEP NO--UR/0394/70/008/002/0117/0118

CIRC ACCESSION NO--AP0125023

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125023
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MANEB IN 0.05PERCENT AQ. SOLN. USED ON TOBACCO SPROUTS AND UP TO 0.25PERCENT ON SEEDLINGS WAS EFFECTIVE AGAINST PERONOSPORA TABACINA. ZINEB, POLYCARBAZINE, AND POLYRAM IN 0.25PERCENT AQ. SOLNS. WERE EFFECTIVE ONLY IN THE LATE PERIOD OF SEEDLING GROWTH. FACILITY: VSES. NAUCH.-ISSLED. INST. KHIM. SREDSTV ZASHCH. RAST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 616.988.73-036.12-085.371

BILIBIN, A. F., IL'INSKIY, Yu. A., TERSKIKH, I. I., and DVURECHENSKAYA, G. S., Chair of Infectious Diseases, Second Moscow Medical Institute imeni N. I. Pirogov, and Ornithosis Laboratory, Institute of Virology imeni D. I. Ivanovskiy, Academy of Mecical Sciences USSR

"Vaccine Therapy in Chronic Ornithosis"

Moscow, Sovetskaya Meditsina, Vol 33, No 7, Jul 70, pp 24-27

Abstract: Chronic latent ornithosis with periodic relapses must be treated not only with antibiotics which act on the ornithosis pathogen and accompanying bacteria, but also with substances which stimulate the body's general and specific reactivity. The tissue ornithosis vaccine developed by Terskikh in 1963 accomplishes these objectives. The vaccines can be given subcutaneously or intracutaneously. The treatment procedure is determined individually for each patient, on the basis of his local, focal, and general reactions to initial intracutaneous administration of 0.1 ml of the vaccine. If the reactions are mild, the intracutaneous route is used for subsequent vaccinations. This method is also recommended when other diseases are present. Immediate and long-term observations of patients with chronic ornithosis who have been treated with this vaccine indicate that the method is effective.

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USSR

UDC 616.12-008.331.1.616-001.18

MEYERSON, F. Z., BARBARASH, N. A., DVURECHENSKAYA, G. Ya., and GORBUNOVA, L. A., Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, and Kemerovo Medical Institute, Kemerovo

"Effect of Preliminary Adaptation to Cold on the Development of Experimental Hypertension"

Moscow, Doklady Akademii Nauk SSSR, Vol 210, No 5, 1973, pp 1,243-1,245

Abstract: It had been established in earlier work that adaptation of animals to altitude hypoxia on intermittent exposure inhibited the development of hypertension produced by the combined action of NaCl and desoxycorticosterone (DPCS). Experiments conducted on rats in this instance showed that adaptation to cold had a similar effect in inhibiting the development of salt-DOCS hypertension. Adaptation to cold was carried out by exposing the rats to a temperature of 0-4° for 6 hrs per day during 110 days. Salt-DOCS hypertension was induced by implanting to the animals 50 mg/100 g DOCS subcutaneously seven days after a nephrectomy on the left side, repeating the implantation after another seven days, and giving to the animals a 1% NaCl solution to drink instead of ordinary water. The arterial pressure of experimental

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MEYERSON, F. Z., et al., Doklady Akademii Nauk SSSR, Vol 210, No 5, 1973, pp 1,243-1,245

animals adapted to cold and treated with MaCl-DOCS increased briefly to the same level as that of unadapted animals in which hypertension was induced with NaCl and DOCS, but then dropped back to normal, while that of the control animals continued to increase. During the period following the first two weeks of the experiment, in which the arterial pressure of the cold-adapted animals was substantially lower than that of unadapted animals, the unadapted animals with NaCl-DOCS hypertension drank much more NaCl solution than the animals adapted to cold. The retention of Na in the aorta wall and the pressure effect of noradrenaline were lower for adapted than unadapted animals, while no difference in the blood-pressure lowering action of acetylcholine was observed. (Submitted by Academician V. N. Chernigovskiy, 15 Dec 72)

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USSR

UDC 612.143-06:612.592.1

DVURECHENSKAYA, G. YA., NAYDICH, B. G., and KHABENSKIY, B. YA., Department of Normal Physiology, Kemerovo Medical Institute, and Laboratory of Experimental Cardiology, Institute of Normal and Pathological Physiology, Academy of Medical Sciences, Moscow

"Dynamics of Arterial Pressure, Pressure and Metabolic Reactions to Norepinephrine During Adaptation to Cold"

Moscow, Kardiologiya, No 9, 1971, pp 58-63

Abstract: Rats were exposed 6 hours daily for 45 days to temperatures ranging from 6 to 9° and 0 to 5° C. Although arterial pressure was considerably higher at the end of the experiment, each daily exposure to cold lowered it to the pre-experimental level. There was no difference between the experimental animals and the controls in the metabolic test (oxygen consumption) before or after the injection of norepinephrine on day 15 of exposure. On days 30 and 45 there was also no difference in oxygen consumption before the injection of norepinephrine, but oxygen consumption increased significantly after it in both groups. Pressor reactions to norepinephrine intensified on day 15 and then weakened as adaptation proceeded.

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USSR

UDC: 621.315.592

GERASIMENKO, N. N., DVURECHENSKIY, A. V., ROMANOV, S. I., and SMIRNOV, L. S.

"Interaction of Defects and Impurities in the Introduction of Ions into Silicon"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1978-1981

Abstract: The experiments described in this paper were designed for examination of the interaction involving the defects appearing with the introduction of ions into crystals by ion bombardment, and implanted as well as diffusion-generated impurities. Specimens for the experiments were Si doped with boron, with a resistivity of about 1 ohm·cm, bombarded by Ar^+, B^+, E = 40, and P^+, E = 40 kev. The methods of electron paramagnetic resonance and the diffraction of fast electrons by reflection were used for the investigation. Anode oxidation controlled removal of the Si layers. A curve giving the number of paramagnetic defects as a function of the ion irradiation dosage shows that the process of defect accumulation under Ar^+ bombardment is subject to laws found earlier by these same authors (e.g., FTP, 5, 1971, p 1760) but that

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UDC: 621.315.592

GERASIMENKO, N. N., et al, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1978-1981

irradiation by B^+ and P^+ produce different results, with a reduction in the number of VV centers as a result of higher dosage. This anomaly is explained by the disappearance of the VV centers at a definite concentration of the introduced impurity, while further bombardment leads to restoration of the crystal structure.

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USSR

UDC: 621.315.592

GERASIMENKO, N. N., DVURECHENSKIY, A. V., KACHURIN, G. A., PRIDACHIN, N. B., SMIRNOV, L. S., Institute of Physics of Semiconductors, Siberian Department of the Academy of Sciences, Novosibirsk

"Radiation Annealing of Defects Formed During Ion Bombardment of Crystals"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 9, Sep 72, pp 1834--1835

Abstract: The authors investigate the recovery of gallium arsenide and silicon structures amorphized by bombardment with 40 keV argon ions. The annealing was accompanied by irradiation with 3.5 MeV electrons or 10 keV protons. The three procedures used for checking structural transformations are described. It was found that defects induced by argon ion bombardment were not removed by heating at 200-250°C without proton irradiation. A temperature of 500°C is required without the proton treatment. When proton bombardment is used, the lower temperature is sufficient for recovery of the nondefective structure. The authors thank S. I. Romanov for taking the electron-diffraction patterns of the surface of the specimens, and B. I. Vikhrev for measuring the electron paramagnetic resonance.

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USSR

UDC 621.315.592

GERASIMENKO, N. N., DVURECHENSKIY, A. V., PANOV, V. I., and SMIRNOV, L. S.

"Threshold Energy of the Formation of Radiation Defects in Semiconductors"

Leningrad, Fizika i tekhnika poluprovodnikov, Vol 5, No 8, 1971, pp 1644-1646

Abstract: The authors set themselves the problem of determining the threshold for the initial formation of a defect of the Fränkel type in semiconductor radiation under electron bombardment in this brief communication. For their experiments, they chose the A center in silicon (the association of a vacancy with oxygen) of the n type with a resistivity of 2 ohm·cm and an oxygen concentration of $2 \cdot 10^{17}$ per cc. The specimens were irradiated in a van de Graaf accelerator at room temperature. The measurements were made by the electron paramagnetic resonance method at a temperature of 77°C with a spectrometer having a sensitivity of 10^{11} spins/gauss. The irradiation dosage was kept small to maintain constant the rate of A-center accumulation. Gratitude is expressed to R. R. Sevast'yanenko and M. P. Shadrina for preparing the specimens and to V. A. Abramenko and S. A. Sokolov for performing

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USSR

GERASIMENKO, N. N., et al., Fizika i tekhnika poluprovodnikov, Vol 5, No 8, 1971, pp 1644-1646

the irradiation procedure. The authors are connected with the Novosibirsk Semiconductor Physics Institute.

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1/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EDGE RADIATION OF CADMIUM SULFIDE -U-

AUTHOR-(03)-GERASIMENKO, N.N., DVURECHENSKIY, A.V., SAFRONOV, L.N.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 478-83

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CADMIUM SULFIDE, FREE ELECTRON, ELECTRON CAPTURE, INOGRANIC CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1714 STEP NO--UR/0449/70/005/003/0478/0483

CIRC ACCESSION NO--AP0120426

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0120426

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EDGE RADIATION WAS STUDIED EXPTL. AT T GREATER THAN OR EQUAL TO 80DEGREESK; CDS CRYSTALS OF VARIOUS PURITIES WERE USED. IN THIS TEMP. REGION, THE EDGE RADIATION CAN BE CAUSED BY BOTH A DONOR ACCEPTOR RECOMBINATION AND A FREE ELECTRON CAPTURE BY THE ACCEPTOR CENTER. BOTH MECHANISMS AND THE KINETICS OF EDGE RADIATION ARE DISCUSSED IN DETAIL. FACILITY: INST. FIZ. POLUPROV., NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC 66.048

KORNEICHEV, A. I., and DYABLO, V. V.

"Optimal Parameters of Thermal Desalination Plants"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, No 8, 1970, pp 1-4

Abstract: Since desalination plants based on the distillation principle are still the most economical (in fact, the only) means of removing salt from large amounts of water, selection of their parameters represents a critical problem. As a guide for this purpose, the authors combine a number of physical (purpose of plant, temperature, use of adaptive evaporation or sudden boiling) and economic factors, to arrive at formulas for selecting optimal parameters. The paper is accompanied by full derivations and a sample calculation.

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USSR

UDC 542.48

DYABLO, V. V., ZASTAVNYUK V. K., KARDASEVICH, O. A., and KORNEICHEV, A. I.

"Calculation of Optimal Parameters of Thermal Distillation Equipment for Salt Water With Maximum Evaporation"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, No 6, 1971, pp 4-8

Abstract: The basic problem facing design of novel desalination equipment is the selection of optimal parameters assuring production of fresh water at minimal cost. A method is reported for determination of such optimal parameters for multiple stage desalination units with maximum evaporation in which the concentration of the solution is brought to about the crystallization point of various salts. To prevent accumulation of sediment on heating surfaces hydrophobic heat carrier is used. An apparatus consisting of the main heater, heat exchange chamber, evaporation chamber, condenser and a pump, and the principles of operation are described in detail. Formulas have been developed, which were solved using the ETsVM "Minsk-22" system. Optimal parameters for desalination equipment have been reported graphically.

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USSR

Masers and Lasers

UDC: 621.372.8:535

VOLKOV, V. I., DYACHENKO, A. A., and SHUSHPANOV, C. Ye.

"Beam Guides With Pulsating Beams"

V sb. Aerot-rmooptika i luchevody (Aerothermal Optics and Beam Guides--collection of works) Minsk, 1970, pp 215-228 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3B208)

Translation: A comparison is made of ordinary beamguides and those in which pulsating wave beams are propagated from the point of view of the reliability of the respective transmitting channels. The beam guide irregularity is assumed arbitrary with regard to its nature, extent, and distribution law. Curves are given of the integral probability distribution laws for the transmission losses resulting from computer modeling of a group of irregular Gaussian beam guides, whose working wavelength was increased by six to 16 times compared with the initial ones. Two illustrations, bibliography of seven. V. S.

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USSR

UDC: 621.372.8:535

VOLKOV, V. I., DYACHENKO, A. A., and SHUSHPANOV, O. Ye.

"Computer Investigation of the Reliability of Beam Guides with Gaussian Diaphragms"

V sb. Aerotermooptika i luchevody (Aerothermal Optics and Beam Guides--collection of works) Minsk, 1970, pp 174-193 (From Ref Zh-Radiotekhnika, No. 3, March 71, Abstract No. 3B211)

Translation: A comparison is made of the various beam waveguides for the purpose of clarifying the following possibilities: increasing the reliability of beam guide lines for specified requirements of the accuracy of setting up the waveguide elements, and weakening the requirements of the adjustment accuracy of transmission lines for maintaining their high reliability. A model of a Gaussian beam guide is described, and the results of the modeling are given. Six illustrations, bibliography of 10. V. S.

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USSR

UDC: 621.372.8:535

DYACHENKO, A. A. and SHUSHPANOV, O. Ye.

"Reflector Quasioptical Transmission Lines"

V sb. Aerotermooptika i luchevody (Aerothermal Optics and Beam Guides--collection of works) Minsk, 1970, pp 138-161 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3B210)

Translation: The measurement methods and results of the experimental investigation of the characteristics of the natural waves of astigmatic reflector beam guides are described. The experiments were made on a laboratory model of the beam guide for which pairs of spherical mirrors with a radius of curvature of 105 m were used as correctors. The results of the modeling of irregular reflector beam guides are explained and the measurements of their reliability given. Seven illustrations, bibliography of 19. V. S.

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USSR

UDC 577.391

VASYL'CHENKO, V. M., TODOROV, I. M., DYACHENKO, A. M., and VASYL'YEVA, Ye. S., Physico Technical Institute of Low Temperatures, Academy of Sciences Ukrainian SSR, Kharkov, and Sector of Molecular Biology and Genetics, Academy of Sciences Ukrainian SSR, Kiev

"Investigation of Spleen and Liver Polysomes of Nonimmunized and Immunized Rats With Acute Radiation Damage"

Kiev, Ukrainskyy Biokhimicheskiy Zhurnal, Vol 42, No 4, 1970, pp 499-507

Abstract: The state of the spleen and liver polysomal apparatus was studied in vivo and in vitro in albino rats subjected to lethal doses of ionizing radiation and immunization. It was established that 24 hours after irradiation of the non-immunized animals, the protein-synthesizing activity of the liver polysomes increased while the spleen polysomes were simultaneously destroyed, resulting in a decrease in their synthetic activity. Immunization resulted in a considerable activation of protein synthesis in the liver and spleen. When the animals were irradiated 24 hours after immunization, no decrease in the functional activity of the polysomal apparatus in the spleen was noted. Polysome protein synthesis in the liver, on the other hand, decreased considerably under analogous conditions. It is assumed that an acute radiation damage the liver temporarily participates in compensatory immunogenesis. Possible reasons for the radioprotective effect of preliminary immunization on the polysomal apparatus of irradiated animal spleens are discussed.

1/1

USSR

UDC 669.715.018.95

BABICHEV, B. I., D'YACHENKO, L. A., ZOLOTOREVSKIY, YU. S., IVANOV, V. V., KUCHKIN, V. V.

"Possibility of Hardening Aluminum Alloys by VT15 Alloy"

V sb. Metallurgiya (Metallurgy -- collection of works), No 14, Sudostroyeniye Press, Leningrad, 1971, pp 128-132 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4I647)

Translation: A study was made of the possibilities of creating layered composite materials by reinforcing Al-alloys with high-strength materials. As an example a composite is presented in which the role of the hardening agent is played by VT15 alloy. The theoretical technological scheme and the heat treatment conditions for this composite material were selected so as to insure a strength >70 kg/mm^2 with a specific weight of 3.32 g/cm^3. The study of the physical and mechanical properties of this composite makes it possible to draw conclusions regarding its promising nature. 3 illustrations, 1 table, and a 6-entry bibliography.

1/1

USSR

UDC 621.373.826

MIKAELYAN, A.L., D'YACHENKO, V.V.

"Waveguide-Type Optical Resonators"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 5(11).1972, pp 97-99

Abstract: In optical resonators it is possible to use oscillation types analogous to waveguide types. The paper describes seven of the simplest variations of such optical "waveguide" resonators. The active element has the form of a flat plate; the lateral surfaces of it are polished. The light ray is admitted through an end at some angle, and then experiences complete reflection from the lateral surfaces and emerges through the second end. The paper classifies such resonators by the number of reflections from the lateral surfaces and the size of the angle at which the beam falls at the end. The high selectivity of waveguide resonators and their insensitivity to thermooptical effects caused by pumping is stressed. Experimental results are presented which confirm the high coherency of the oscillations of waveguide resonators in the case of strong deformations of the active medium. 5 fig. 5 ref. Received by editors, 8 June 1972.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--THE UKRAINIAN REPUBLIC'S DATA BANK OF ALGORITHMS AND PROGRAMS -U-

AUTHOR--DYACHENKO, A.I.

COUNTRY OF INFO--USSR

SOURCE--KIEV, MEKHANIZATSIYA I AVTOMATIZATSIYA UPRAVLENIYA, NO 1, JAN-FEB 70, PP 61-62

DATE PUBLISHED--------70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--DATA STORAGE, COMPUTER PROGRAM, ALGORITHM, LIBRARY/(U)MINSK DIGITAL COMPUTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0952 STEP NO--UR/0432/70/000/001/0061/0062

CIRC ACCESSION NO--AP0116457

UNCLASSIFIED

2/2 018 UNCLASSIFIED

CIRC ACCESSION NO--AP0116457 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CENTRAL DATA BANK FOR STORAGE AND DISSEMINATION OF ALGORITHMS AND PROGRAMS (RFAP) HAS BEEN ORGANIZED IN THE UKRAINIAN SSR UNDER THE DIRECTION OF THE INSTITUTE OF CYBERNETICS, ACADEMY OF SCIENCES UKRAINIAN SSR. IT IS INTENDED TO SUPPLY COMPUTER PROGRAMMING DATA ON REQUEST TO STATE ADMINISTRATIVE AND PRODUCTION ACTIVITIES, AS WELL AS TO STORE PROGRAM DATA FROM THESE ACTIVITIES. THE RFAP STORES ALGORITHMS AND PROGRAMS ON BASIC RESEARCH, APPLIED ENGINEERING, AND ECONOMY PLANNING TASKS, TOGETHER WITH INSTRUCTIONS FOR THEIR USE, TRANSLATIONS FROM ALGORITHMIC TO MACHINE LANGUAGE, AND DEBUGGING PROGRAMS. AN UP TO DATE REFERENCE CATALOG OF ALL CURRENT STORED MATERIAL IS AVAILABLE TO INTERESTED PARTIES. THE RFAP LIBRARY CONTAINS OVER 2,500 ALGORITHMS, PROGRAMS AND SUBROUTINES, INCLUDING 911 ON COMPUTER MATHEMATICS; 316 ON FUNCTIONAL CONVERSATION; 439 ON CYBERNETICS; 147 ON PROBABILITY AND STATISTICAL THEORY; 616 ON RESEARCH AND ENGINEERING PROBLEMS; AND 84 ON PLANNED ECONOMY PROBLEMS. THE ARTICLE GIVES A SAMPLE CATALOG LISTING OF A PROGRAM SET DESIGNED FOR THE MINSK-22 FOR AUTOMATING THE DESIGN AND CONTROL OF A MOTOR TRANSPORT SYSTEM.

UNCLASSIFIED

USSR

UDC 621.382.2.029.64

PROKHOROV, E.D., BELETSKIY, N.I., DYADCHENKO, A.V.

"Possibilities Of Increasing The High-Frequency Limit Of Gunn Diode Performance"

Radiotekhnika i elektronika, Vol XVII, No 5, May 72, pp 1103-1106

Abstract: It is shown that a voltage of complex form in a Gunn diode or its operation in a multiple-loop [mnogokonturnyy] circuit can lead to an increase of the limit of Gunn diode performance and to an increase of the efficiency of the oscillator at frequencies where the effect of scattering of the intervalley electrons is already felt. An approximate analysis is used for this purpose. 3 fig. 6 ref. Received by editors, 17 September 1971.

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1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--EXPERIMENTAL INVESTIGATION OF THE WIDTH OF THE CURRENT VOLTAGE CHARACTERISTICS OF GUNN DIODES -U-

AUTHOR-(04)-PROKHOROV, E.D., DYADCHENKO, A.V., SHALAYEV, V.A., BELETKSIY, N.I.

COUNTRY OF INFO--USSR

SOURCE--RADIOTEKHNIKA I ELEKTRONIKA, VOL. 15, APR. 1970, P. 792-796

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--VOLT AMPERE CHARACTERISTIC, GUNN DIODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1424 STEP NO--UR/0109/70/015/000/0792/0796

CIRC ACCESSION NO--AP0118413

UNCLASSIFIED

2/2 016 UNCLASSIFIED

CIRC ACCESSION NO--AP0118413 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL STUDY OF THE WIDTH OF THE CURRENT VOLTAGE CHARACTERISTICS OF GUNN DIODES AS A FUNCTION OF CARRIER CONCENTRATION, DIODE LENGTH, AND CARRIER MOBILITY. ATTENTION IS GIVEN TO THE RELATION BETWEEN THE WIDTH OF THE CURRENT VOLTAGE CHARACTERISTIC AND RECOMBINATION RADIATION. IT IS SHOWN THAT THE DOMINANT ROLE IN CHANGING THE CURRENT VOLTAGE CURVES OF THE DIODES IS PLAYED BY IMPACT IONIZATION IN A STRONG ELECTRIC FIELD. THE HEATING WHICH LEADS TO DIODE BREAKDOWN AT BOLTAGES EXCEEDING THE WIDTH OF THE CURRENT VOLTAGE CURVE ALSO CAUSES THE DEVELOPMENT OF IMPACT IONIZATION IN A STRONG ELECTRIC FIELD.

UNCLASSIFIED

USSR

UDC 669.15-194.001.6

BABCHENKO, S. L., KARP, S. F., APTEKAR', N. M., YASHNAYA, G. V., and D'YACHENKO, A. Z.

"Effect of Nickel on the Impact Toughness of G13L Steel During Explosion Hardening"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 4, Jul-Aug 70, pp 40-41

Abstract: A study was made of the effect of nickel additions on the impact toughness of G13L steel in the temperature range from +20 to -40°C after explosion hardening. The impact toughness of the standard metal before explosion hardening was 21.8 kg/cm^2; the nickel-alloyed metal had an impact toughness of 22.7 kg/cm^2. Explosion hardening produced work hardening through the entire thickness of the metal. The hardness reached 33-35 RC, the reduction in thickness was up to 1 mm (initial thickness 11 mm). Impact thoughness was significantly decreased, although G13L steel alloyed with nickel retains plasticity to a greater extent than steel of the standard composition. At -40°C, the impact toughness of the standard steel is sharply reduced after explosion hardening, whereas the nickel-

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002200720008-0"

USSR

BABCHENKO, S. L., et al, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 4, Jul-Aug 70, pp 40-41

alloyed steel shows only a slight decrease in impact toughness at this temperature.

2/2

USSR

UDC 532.135.082

D'YACHENKO, B. P., YERFILOV, V. N., YEVSTAFT'YEV, G. D.

"Device for Measurement of Viscoelastic Properties of Liquids at Pressures up to 6000 kg/cm^2"

Kontaktno-Gidrodinamich. Teoriya Smazki i Eye Prakt. Primeneniye v Tekhn. [The Contact-Hydrodynamic Theory of Lubrication and its Practical Application to Technology -- Collection of Works], Kuybyshev, 1972, pp 5-6 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 12, 1972, Abstract No 12.32.1184).

Translation: A vibration viscosimeter for simultaneous measurement of the attenuation decrement of the frequency of natural oscillations of a resonator loaded with a fluid in the frequency range from 10 to 300 KHz is briefly described. The sensor is a cylindrical torsional-oscillating quartz resonator, oscillations in which are excited by a series of rectangular pulses. The device measures the period of natural oscillations of the resonator up to the boundary of the oscillating mode with an error of less than 10^{-4}.

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Acc. Nr. AP0034404

Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 2, pp 185-188

SIGNIFICANCE OF AMPICILLIN CONCENTRATIONS IN THE TREATMENT OF SURGICAL PATIENTS

D'yachenko, G. M.; Butylina, L. V.; Vasil'yev, V. K.; Navashin, S. M.

Institute for Clinical and Experimental Surgery, Department of Experimental Therapy of National Institute for Antibiotics, Moscow

Ampicillin was used in the treatment of surgical cases and the dynamics of the antibiotic blood levels was studied. It was found that ampicillin produced a satisfactory effect and was retained in blood for 5 hours in therapeutic concentrations. In patients with the kidney affeotions the antibiotic therapeutic concentrations were 4—6 times higher than usual ones. The dose of ampicillin in the treatment of patients with the kidney insufficiency should be individual, depending on the drug blood level.

D.M.

V.

REEL/FRAME

19711064

6

DYACHENKO L.F.

UNCLASSIFIED

TITLE--THE ATYPICAL CLINICAL COURSE OF MITRAL LESION -U-

PROCESSING DATE--03JUN 70

AUTHOR--DYACHENKO, L.F., STEELTSOVA, E.V.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 1, PP 24, 29

DATE PUBLISHED-------70

17
5
22

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEART SURGERY, HEART DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1979/0869

STEP NO--UR/0589/70/104/001/0024/0029

CIRC ACCESSION NO--APOO47343

UNCLASSIFIED

Acc. Nr: AP0047343

Ref. Code: UR0589

PRIMARY SOURCE: Vestnik Khirurgii imeni I. I. Grekova, 1970, Vol 104, Nr/ , PP 24-29

THE ATYPICAL CLINICAL COURSE OF MITRAL LESION

D'yachenko, L. F.; Strel'tsova, E. V.

In the paper the authors report the analysis of clinical data in 127 patients with mitral lesion, in whom certain deviations from the typical clinical picture of mitral stenosis and insufficiency were observed. Prior to surgery in all the investigated patients marked mitral stenosis, and in some cases insignificant regurgitation were suspected. During the operation in 19 cases "pure" mitral insufficiency or its predominance were observed. Retrospective analysis of all the data demonstrated that all the routine methods of investigation, used separately in mitral lesion, could not utterly exclude the possibility of erroneous diagnosis. The precise diagnosis of predominant stenosis or mitral valve insufficiency could be established only in combined estimation of clinical and special methods of investigation.

111

REEL/FRAME
19790869

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1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EFFECT OF ALLOYING WITH NITROGEN ON THE PROPERTIES OF THE AL4 ALLOY -U-

AUTHOR-(02)-DYACHENKO, L.I., POGODINAALEKSEYEVA, K.M.

COUNTRY OF INFO--USSR

SOURCE--LITEINOE PROIZVOD. 1970, 2, 24-5

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--ALUMINUM ALLOY, ALLOY DESIGNATION, NITROGEN CONTAINING ALLOY, MECHANICAL PROPERTY, DUCTILITY, IMPACT STRENGTH, GRAIN SIZE, FOUNDRY TECHNOLOGY, NITRIDE/(U)AL4 ALUMINUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1736 STEP NO--UR/0128/70/002/000/0024/0025

CIRC ACCESSION NO--AP0118714

UNCLASSIFIED

2/2 027 UNCLASSIFIED

CIRC ACCESSION NO--AP0118714 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AL4 WAS ALLOYED WITH 0.01-0.02PERCENT N SUB2 BY THE ADDN. OF 0.5PERCENT AL HEXACHLORAMMINE (SIC) (ON MIXING WITH THE MELT IT DECOMPN. INTO NH SUB3 AND ALCL SUB3) INTO A 400 KG MELT. THE METAL WAS CAT INTO A CHILL MOLD AND WAS FREE OF CAVITIES, PORES, AND BLISTERS. THE N SUB2 INCREASED THE YILED STRENGTH FROM 14.0 TO 17.2 KG-MM PRIME2 AND THE DUCTILITY FROM 1.65 TO 2.4PERCENT IN THE AS CAST STATE. AFTER HEAT TREATMENT THE BENEFICIAL EFFECT OF THE N SUB2 REMAINED, AND N SUB2 ALSO INCREASED THE IMPACT STRENGTH OF THE ALLOY. NO SEP. NITRIDE PHASES WERE OBSD. IN THE MICROSTRUCTURE. THE N DECREASED THE GRAIN SIZE OF THE ALLOY.

UNCLASSIFIED

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002200720008-0"

1/2 030 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--NATURAL AGING OF ALLOY AL11 AFTER ITS TREATMENT BY HEXACHLORAMMINE OF ALUMINUM AND ULTRASOUND -U-

AUTHOR-(02)-PUGODINAALEKSEYEVA, K.M., DYACHENKO, L.I.

COUNTRY OF INFO--USSR

SOURCE--SBORNIK TRUDOV, OSOBOYE KONSTRUKTORSKO-TEKHNOLOGICHESKOYE BYURO

REFERENCE--REFERATIVNYY ZHURNAL, METALLURGIYA, NO 1, 1970, ABSTR NO 11540

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--METAL AGING, ALLOY DESIGNATION, ALUMINUM ALLOY, ALLOY COMPOSITION, ULTRASONIC EFFECT, FOUNDRY TECHNOLOGY, CHLORAMINE, NITROGEN CONTAINING ALLOY, MECHANICAL STRENGTH, SILICON CONTAINING ALLOY, ZINC CONTAINING ALLOY, PRECIPITATION HARDENING/(U)AL11 ALUMINUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/1539 STEP NO--UR/0000/69/000/002/0111/0114

CIRC ACCESSION NO--AR0114194

UNCLASSIFIED

2/2 030 UNCLASSIFIED

CIRC ACCESSION NO--AR0114194 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ALLOY AL11 (7PERCENT SI, 12PERCENT ZN, REMAINDER, AL) WAS TREATED BY THE HEXACHLORAMMINE IN A LIQUID STATE AT 790-810DEGREES AND WAS POURED AT 720-740DEGREES INTO AN INGOT MOLD HEATED TO 180-200DEGREES. ALLOY AL11 IS SELF HARDENING. AS A RESULT OF TREATMENT BY THE HEXACHLORAMMINE IN A LIQUID STATE, THE HARDNESS OF THE ALLOY AFTER NATURAL AGING INCREASED BY A FACTOR OF 1.5 (FROM 89.7 TO 131 KG-MM PRIME2) IN COMPARISON TO THE HARDNESS OF THE ALLOY, AFTER NATURAL AGING, WHICH WAS NOT TREATED BY THE HEXACHLORAMMINE IN A LIQUID STATE. THE INCREASE IN THE STRENGTH OF THE ALLOY IS EXPLAINED BY EFFECT OF N, THE CONTENT OF WHICH, DUE TO THE INTRODUCTION OF THE HEXACHLORAMMINE, INCREASED FROM 0.001 TO 0.01. THE MICROSTRUCTURE ALSO IMPROVED. A SERIES OF EXPERIMENTS WAS DEVOTED TO STUDYING THE INFLUENCE OF ULTRASOUND, INTRODUCED INTO THE FUSION WHILE THE HEXACHLORAMMINE IN THE LIQUID STATE WAS BEING MIXED IN, UPON THE NATURAL AGING OF ALLOY AL11. ULTRASOUND INCREASES THE EFFECT OF STRENGTHENING THE ALLOY, APPARENTLY INCREASING THE SOLUBILITY OF N IN THE ALLOY AND FACILITATING THE DEVELOPMENT OF GREATER COMPLEXITY OF ITS STRUCTURE.

UNCLASSIFIED

USSR

UDC 531.383

DYACHENKO, M. P., Institute of Mechanics of the Academy of Sciences of the Ukrainian Soviet Socialist Republic

"On the Oscillation of a Gyroscope With a Cavity Partially Filled With an Inviscid Incompressible Liquid"
(Presented by Kil'chevskiy, M. O., Academician, Academy of Sciences of the Ukrainian SSR)

Kiyev, Dopovidi Akademii Nauk, Seriya A, Ukrainian SSR, No 10, 1971, pp 915—919

Abstract [Ukrainian article] : The problem of oscillations of a heavy symmetrical gyroscope with a cylindrical cavity partially filled with an inviscid incompressible and uniformly swirled liquid is investigated. A characteristic equation of motion of the investigated system with due regard for free surface oscillations was derived. The analysis of this equation shows that the hypothesis on the nondeformability of the free surface, usually made in solutions of similar problems, is permissible only in investigations of gyroscope oscillations with frequencies not exceeding the bounds of the frequency spectrum of inertia waves. This hypothesis is unsuitable for gyroscope oscillations located out of this spectrum, because it disregards the effect of surface wave action which can lead to a stability loss of the system in resonance conditions. Fourteen formulas, nine biblio. refs.
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USSR

UDC 612.441.014.426

D'YACHENKO, N. A.

"Functional Shift in the Thyroid Gland during Chronic Exposure to an Ultrahigh-Frequency Field"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, Jul 70, pp 51-52

Abstract: Shifts in the function of the endocrine system, particularly the thyroid gland, were observed in the symptomatology of disorders linked to prolonged exposure to ultrahigh-frequency electromagnetic fields. Subjects frequently exposed to microwave radiation in the centimeter range were examined for thyroid activity, using I^{131}. It was found that shifts in the functional state of the central nervous system brought about by exposure to microwaves affect the endocrine system. This fact explains the finding of enhanced thyroid activity in persons with an asthenic-autonomic system and neurocirculatory dystonia (asthenia). These data are in agreement with literature data on the enhancement of the adrenocorticotropic function of the anterior pituitary gland and the increase in glucocorticoid hormones in the blood in test animals. In many cases the shifts depended on type characteristics of nervous activity and the functional state of the central nervous system. The

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002200720008-0"

USSR

D'YACHENKO, N. A., Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, Jul 70, pp 51-52

insufficiency of internal inhibition of artificially produced excitation of the nervous system enhanced the sensitivity of the animals to ultrahigh-frequency radiation, which is apparently linked to an insufficiency in adaptation reactions.

2/2

USSR

UDC: 616.127:621.396.967

D'YACHENKO, N.A., Maj Med Serv

"The Effect of Ultrahigh-Frequency Electromagnetic Radiation on Myocardial Functions"

Moscow, Voyeenno-Meditsinskiy Zhurnal, No 2, 1970, pp 35-37

Abstract: Myocardial function was investigated by analyzing the duration of the various phases of the cardiac cycle in 62 radar technicians exposed to microwave radiation for 2 to 15 years. All exhibited an increase in the duration of asynchronous contraction, relative shortening of the ejection period, decrease in the duration of mechanical systole, and decrease in the mechanical coefficient. No significant changes were noted in other indices (index of myocardial tension, rate of increase in intraventricular pressure, etc). Alterations in myocardial contractility are ascribed to the effect of nerve impulses on the cardiovascular system. In some cases they reflected degenerative changes in the myocardium.

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1/2 038 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--EFFECT OF ELECTROMAGNETIC MICROWAVE RADIATION ON THE FUNCTIONAL STATE OF THE MYOCARDIUM -U-

AUTHOR--DYACHENKO, N.A.

COUNTRY OF INFO--USSR

SOURCE--VOENNO-MEDITSINSKII ZHURNAL, FEB. 1970, P. 35-37

DATE PUBLISHED----FEB70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MYOCARDIUM, ELECTROMAGNETIC BIOLOGIC EFFECT, MICROWAVE BIOLOGIC EFFECT, CARDIOGRAPHY, NEUROSIS, CARDIOVASCULAR SYSTEM, RADAR BIOLOGIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0926 STEP NO--UR/0177/70/000/000/0035/0037

CIRC ACCESSION NO--AP0109083

UNCLASSIFIED

2/2 038 UNCLASSIFIED

CIRC ACCESSION NO--AP0109083 PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE FUNCTIONAL STATE OF THE MYOCARDIUM IN A GROUP OF 62 RADAR OPERATORS WHO WERE EXPOSED FOR 3.5 HR DAILY TO A MICROWAVE FIELD DURING WORK OVER PERIODS FROM 2 TO 15 YEARS. VARIATIONAL ANALYSIS OF POLYCARDIOGRAPHIC RECORDINGS IS CARRIED OUT TO DETERMINE THE DURATION OF THE CARDIAC CYCLE AND THE PHASE STRUCTURE OF THE SYSTOLE. SUBJECTIVE COMPLAINTS CHARACTERISTIC OF AN ASTHENO NEUROTIC CONDITION ARE INDICATED IN 49 SUBJECTS. THE CHANGES IN THE CARDIAC PHASE ACTIVITY OBSERVED IN SOME OF THE SUBJECTS ARE LINKED TO THE EFFECTS OF NERVOUS IMPULSES ON THE CARDIOVASCULAR SYSTEM AND IN SOME CASES TO DISTROPHIC DISORDERS IN THE MYOCARDIUM.

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0136554
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHOTOCOND. WAS INVESTIGATED OF ADDITIVELY COLORED KCL SINGLE CRYSTALS. IN SPECIMENS WITH SPUTTERED ELECTRODES, CONVENTIONAL PHOTOCOND. WAS OBSD. FROM ROOM TEMP. TO 150DEGREES. WITHOUT SPUTTERED ELECTRODES, THE PHOTOEFFECT WAS DUE TO INCREASED CAPACITATIVE SUSCEPTANCE. ITS KINETICS IS COMPLEX.
FACILITY: ODESS. GOS. UNIV. IM. MECHNIKOVA, ODESSA, USSR.

UNCLASSIFIED

UDC 576.858.5

USSR

DYACHENKO, N. S., and NOSACH, L. N., Institute of Microbiology and Virology, Academy of Sciences Ukrainian SSR

"Reproduction of Type I Adenovirus Under Conditions of Blocking of Cell DNA Synthesis With Mitomycin C"

Kiev, Mikrobiologicheskiy Zhurnal, Vol 33, No 5, Sep/Oct 71, pp 604-608

Abstract: A culture of KB cells was exposed from 20 hours with mitomycin C in concentrations of 2 and 10 micrograms per 100,000 cells. As shown by the extent of inclusion of H^3-thymidine, DNA synthesis in the cells was inhibited partially and to 97.3 percent by mitomycin in the first and second concentrations, respectively. Upon infection of the cell culture with type I adenovirus, previous blocking of the synthesis of cellular DNA by the effect of mitomycin C had no effect on virus reproduction or the nature of intranuclear DNA-containing adenovirus inclusions in the cells.

USSR

UDC 547.96:576.3/:576.858.5

DYACHENKO, N. S., NOSACH, L. M., VANTSAK, N. P., and GUSHCHA, K. P., Institute of Microbiology and Virology, Academy of Sciences UkSSR

"Intensity of Protein Accumulation in the Dynamics of Formation of Intranuclear Inclusions in Cells Infected With Type I Adenovirus"

Kiev, Mikrobiologicheskiy Zhurnal, Vol 33, No 4, Jul/Aug 71, pp 478-483

Abstract: The accumulation of protein in nuclei and cytoplasm of KB cells infected with type I adenovirus was investigated cytophotometrically according to Mazia. Cells with inclusions of the following types in the nucleus (corresponding to types II-VI of DNA-containing inclusions) were subjected to cytophotometric study: 1) fine-grained, 2) granular, 3) coarse-grained inclusions, 4) unformed central corpuscle, 5) formed central corpuscle. Accumulation of protein continued only in stage 1. In stages 2-5 the amount of protein in the nucleus remained constant. Its amount in the cytoplasm decreased in stages 2-4 to a level corresponding to that for uninfected controls, while it increased in stage 5. The results indicated that the accumulation of protein, which began in the nuclei and cytoplasm before any changes in the cells were discernible upon staining according to Mazia, was completed in stage 1. One may assume that in stages 2-5 the

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002200720008-0"

UDC 576.858.5

USSR

NOSACH, L. M., DYACHENKO, N. S., GUSHCHA, K. P., and VANTSAK, N. P., Institute of Microbiology and Virology, Academy of Sciences Ukrainian SSR

"Cytofluorometric Study of the Synthesis of Structural Proteins in Type 1 Adenovirus"

Kiev, Mikrobiologicheskiy Zhurnal, Vol 32, No 4, Jul/Aug 70, pp 463-466

Abstract: A cytofluorometric study was made of protein synthesis in type-1 adenovirus. Certain patterns were observed in the nature of the distribution and dynamics of accumulation of structural antigens. The intensity of luminescence of the hexone and peptone antigens increased markedly 16 and 19 hours after infection, respectively, reaching a peak 22 hours after infection.

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USSR

UDC 576.858

DYACHENKO, N. S.

"The Molecular Nature of Viral Antigens"

Abstract: Modern experimental materials on the molecular nature of viral antigens, including data on their physicochemical characteristics, morphology, and viral organization, are summarized in this work. The chief objects of analysis are viral antigens of the smallpox group and adenoviruses.

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USSR UDC: 576.858.5:612.015.33

DYACHENKO, N. S., NOSACH, L. N., GUSHCHA, K. P., and VANTSAK, N. P., Department of Viral Biophysics, Institute of Microbiology and Virology of the Academy of Sciences Ukrainian SSR, Kiev

"Cytophotometric Study of the Degree of Protein Accumulation in Cells Infected With Type 1 Adenovirus"

Leningrad, Tsitologiya, Vol 13, No 2, Feb 71, pp 252-258

Abstract: The sequence of stages in the development of type 1 adenovirus and the formation of intranuclear inclusions was studied in connection with a proposed mechanism for the action of adenovirus on a sensitive cell. The accumulation of proteins in cells and cytoplasm of normal and infected KB cells was studied by use of preparations stained with bromophenol blue sublimate. Statistically reliable values of the mean concentration of protein in the cytoplasm and nuclei of infected cells were observed 18 and 24 hours, respectively, after infection. This process occurs together with the replication of the infected virus and with synthesis of the sensitizing antigen. The protein accumulation is accompanied by the formation of finely divided inclusions. At later stages in the development of these inclusions, the protein contents of the nuclei remain the same, whereas those of the cytoplasm are reduced to control level.
1/2

USSR

DYACHENKO, N. S., et al, Tsitologiya, Vol 13, No 2, Feb 71, pp 252-258

Cells containing formed nuclear bodies represent an exception: a considerable increase in the protein contents is observed in them. The data obtained indicate that the inclusions have a different function in the replication of adenovirus and in cellular metabolism at different stages of formation.

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USSR UDC 542.97:547.1'13:546.815:547.1'118

RAZUVEYEV, G. A., TROITSKIY, B. B., D'YACHKOVSKAYA, O. S., TROITSKAYA, L. S., MALYSHEVA, I. P., and LEPAYEV, A. F., Institute of Chemistry, Academy of Sciences USSR

"Study of the Stabilizing Activity of Certain Organic Lead Compounds and Their Mixtures With Organic Phosphites During Thermal Degradation of Polyvinyl Chloride"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 12, Dec 73, pp 2759-2764

Abstract: Triphenyllead isocyanate (I) was obtained for the first time in a 72% yield and its thermal degradation was studied in the temperature interval 180-22°. (I) exhibits stabilizing effect on the thermal degradation of the polyvinyl chloride. This stabilizing activity of (I) and $(C_6H_5)_4Pb$ is due to an effective acceptance of HCl. In case of (I) it is also due to the reaction with conjugated double bonds of polyvinyl chloride macromolecules. $(C_6H_5)_3PbNCO$, $(C_6H_5)_3PbCl$ and $(C_6H_5)_4Pb$ form mixtures with organic phosphites acting synergistically on the rate of dehydrochlorination, crosslinking and color changes of polyvinyl chloride.
1/1

D'YACHENKO, P. D.

SO: JPRS 53402
18 JUN 71

UDC: 618.2-082(51.66)

THE ROLE OF THE OBSTETRICS DEPARTMENT AT THE OBLAST HOSPITAL IN IMPROVING OBSTETRICAL CARE FOR INHABITANTS OF KAMCHATSKAYA OBLAST

(abstract)

Article by M.I. Dunayevich, candidate of medical sciences, and A.N. Novikova, Kamchatskaya Oblast department of public health (headed by N.S. Kolesnikov), and obstetrics department (headed by A.N. Novikova) of Kamchatskaya Oblast hospital (chief physician: P.D. D'yachenko), Sovetskoye Zdravookhraneniye, Russian, No 5, 1971, abstracted 18 November 1970, pp 29-31]

The present stage of development of obstetrical care in our country is characterized by an increase in deliveries of rural residents at oblast and central rayon hospitals and decrease in deliveries in rural district hospitals or using the beds of feldsher-obstetrical centers. This is related to the rise in economic and cultural standard of living for the rural population, better railway system, development of transportation (including aviation), better qualification of medical workers, and better quality of diagnosis of complications during pregnancy.

This also applies to Kamchatskaya Oblast, in spite of its vast territory and great distance of populated settlements from oblast and rayon centers (see Table).

Of particular importance is hospitalization in the oblast and rayon hospitals from rural areas and workers' settlements for pregnant women with a poor obstetrical history and complicated course of pregnancy, with respect to skilled and, in a number of cases, specialized medical aid during delivery. The obstetrical departments of oblast hospitals play an important part in this, as the centers for highly skilled obstetrical aid in an oblast. In addition to organizational methodological, emergency and scheduled consultations in obstetrics, the population of oblast regions receives aid in these departments in the most complicated obstetrical and extragenital pathology, pathological deliveries are performed as well as surgical procedures at a qualitatively higher level.

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USSR

UDC 621.039.5

VOPOB'YEVA, V. G., D'YACHENKO, P. P., KUZ'MINOV, B. L., SERGACHEVA, A. I., SMIRENKINA, L. L.

"Recommended Power Dependence following from Analysis of the Energy Balance during Fission"

Tr. trekhstoron. Sov.-Bel'g.-Gollandsk. simpoziuma po nekotorym problemam fiziki bystrykh reaktorov (Works of the Three-Way Soviet-Belgian-Dutch Symposium on some Problems of Fast Reactor Physics), 1970, Vol 1, Moscow, 1970, D-24, pp 1-8 (from RZh-Elektrotekhnika i energetika, No 7, Jul 71, Abstract No 7U137)

Translation: The dependence of the number of secondary fission neutrons $\bar{\nu}$ for Th^{232}, U^{235}, U^{238} formed under the effect of neutrons with an energy up to 6 megaelectron volts was established on the basis of analyzing a large number of experimental data. A formula is presented which establishes the energy dependence of $\bar{\nu}$. Experimental data on the fission energy of Np^{237}, U^{235}, Th^{232}, U^{238} under the effect of neutrons with an energy up to 6 megaelectron volts are presented. There are 2 illustrations and a 10-entry bibliography.

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1/2 028 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--KINETIC ENERGY OF FRAGMENTS IN THE FISSION OF URANIUM 235 BY NEUTRONS WITH ENERGIES FROM 0 TO 0.6 MEV -U-

AUTHOR-(03)-KUZMINOV, B.D., LAJTAI, A., DYACHENKO, P.P.

D

COUNTRY OF INFO--USSR

SOURCE--PHYS. LETT. B 1970, 31(3), 122-3

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--KINETIC ENERGY, FISSION PRODUCT, NUCLEAR FISSION, URANIUM, NEUTRON ENERGY DISTRIBUTION, CHARGE DENSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1467 STEP NO--NE/0000/70/031/003/0122/0123

CIRC ACCESSION NO--AP0101553

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0101553

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MEAN FISSION FRAGMENT KINETIC ENERGY (BAR E SUBK) AND FRAGMENT MASS DISTRIBUTIONS, IN THE PRIME235 U FISSION INDUCED BY MONOENERGETIC N OF E SUBN EQUALS 0-0.6 MEV, CHANGED VERY LITTLE WITH E SUBN. DELTA BAR E SUBK VS. E SUBN WAS POS. WITH DELTA BAR E SUBK SMALLER THAN OR EQUAL TO 0.3 MEV, WHERE DELTA BAR E SUBK EQUALS BAR E SUBK (O SUBN) MINUS BAR E SUBK(E SUBN EQUALS 0). THERE WAS NO LOCAL CHANGE IN THE BAR E SUBK OF DISTINCT FRAGMENT PAIRS WHICH WOULD BE RESPONSIBLE FOR THE VARIATION OF DELTA BAR E SUBK. FOR THE VALUES OF DELTA BAR E SUBK OBTAINED, THE MAX. CHANGE IN THE MOST PROBABLE CHARGE OF FRAGMENTS WAS SIMILAR TO 0.2. THE AV. NO. OF PROMPT N VS. E SUBN PLOT, CALCD. FROM THE ENERGY BALANCE EQUATION, SHOWED THERE WAS NO VARIATION OF CHARGE DISTRIBUTION BETWEEN INDIVIDUAL FRAGMENTS FOR E SUBN EQUALS 0-0.6 MEV. FACILITY: INST. PHYS. POWER ENG., OBNINSK, USSR.

UNCLASSIFIED

USSR UDC 621.385.6

KHOTYAINTSEV, S. N., DERENOVSKIY, M. V., D'YACHENKO, S. M., TARANENKO, V. P.

"Powerful Electron Guns with Control Electrodes"

Kiev, Izvestiya vysshikh uchebnykh zavedeniy--Radioelektronika, Vol XIV, No 9, 1971, pp 997-1008

Abstract: A survey of foreign and Soviet papers on high-perveance electron guns with low voltage modulation is presented. The characteristic features of the structural elements, calculation techniques, control characteristics and operating characteristics of electron guns with grid control are investigated. The most prospective guns are guns with control grids located in front of the cathode. Guns with control posts appear effective for devices with high average power operating with a solenoid.

The study includes the characteristics of development of controlled guns, guns with control electrodes, a triode gun with the "natural" grid potential, the static amplification factor of the triode gun, operation of guns with grid potentials other than "natural," the lens effect of the grid, heating of the grid, grid emission, and designs of guns with control electrodes.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002200720008-0"

USSR

KHOTYAINTSEV, S. N., et al., Izvestiya vysshikh uchebnykh savedeniy—Radioelektronika, Vol XIV, No 9, 1971, pp 997-1008

The transverse components of the electron velocities in guns with control electrodes in front of the cathode and low voltage modulation are larger than in the analogous diode guns as a result of the lens effect of the grid cells. The magnitude of the transverse velocities is minimal for the "natural" grid potential. The average power of the gun is limited to the magnitude at which extraordinary grid heating takes place. Further improvements of the gun characteristics can be expected in guns with low temperature cathodes and in multiple beam systems. Application of a remote focusing electrode for modulation of the electron flux has low efficiency. Electron guns with control posts introduce significant distortions in the beam structure. They are most prospective for powerful devices in which focusing by a constant magnetic field is used.

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D'YACHENKO, S. S.

Selected Translations of Metallurgy JPRS 58611 30 March 1973

UDC 669.017

EFFECT OF THE EXTENT OF INITIAL STATE NON-EQUILIBRIUM ON THE STARTING TEMPERATURE OF THE GAMMA-TO-ALPHA TRANSFORMATION IN STEELS

V. P. Tarabanova, S. S. D'yachenko, and A. M. Petrichenko, Khar'kov Motor Vehicle-Road Institute, submitted to press 10 November 1971, final version 21 April 1972 pages 1206-1212

A decrease in the temperature of the beginning of the $\alpha \longrightarrow \gamma$ *transformation in steels with non-equilibrium structures was observed, which is explained by the increase of the free energy of the object in the origin of defects of the crystalline structure in it. The density of dislocation causing the decrease in temperature of the beginning of the formation of austenite below the "equilibrium" critical point A_{c_1} was estimated.

It is known that the beginning of imperfections essentially affect the kinetics and temperature characteristics of polymorphic transformation. Thus, in reference [1], a decrease in the temperature of the polymorphic transformation $\alpha \longrightarrow \beta$ is observed in cristobalite with an increase in the density of the defect. On the contrary, in whiskers of zinc sulfide [2] and iron [3] an increase in the temperature of the phase transition was noted. As for the variation of the position of the critical points in the heating of steel, as a function of the initial state, this problem so far remains a matter for discussion. Some researchers have noted a decrease in the temperature A_{c_1} in the heating of steels with non-equilibrium structures [4--6]. In later investigations, in conditions of fast heating, no decrease in the critical point below the "equilibrium" position was observed in the variation of the initial state of the steel [7]. At the same time, the theoretical analysis of the variation of the free energy of the phases under the effect of defects in the crystalline structure testifies to the fact that the temperature of the phase transition in non-equilibrium objects must vary

* [sic: $\alpha \rightarrow \gamma$ indicated throughout article. Error probable in title.]

[1, 8]. The introduction of defects of the crystalline structure in the body leads to an irreversible increase in the free energy of the object, which may be described within the framework of conventional thermodynamic representations by a certain additional term, predetermined by the number and chemical potential of the imperfection [9]. In this case the condition of phase equilibrium acquires the form

$$F_1 + U_1 = F_2 + U_2, \qquad (1)$$

where F_1 and F_2 represent the free energies of the phases in equilibrium crystals ("chemical" free energies); U_1 and U_2 are the energies introduced into phases 1 and 2 by imperfections of the crystalline structure.

The increase in the free energy of the system with the introduction of imperfections into it changes the conditions of the formation of the nucleus of the new phase, which not only may affect the kinetics of the phase transformations, but also cause a phase transition not realized at the given temperature in equilibrium crystals analogous to what occurs in bodies with high values of surface energy [10]. As a matter of fact, the phase transition 1 → 2 will occur if

$$F_1 + U_1 < F_2 + U_2. \qquad (2)$$

From expression (2) it follows that if even the chemical free energy $F_1 < F_2$, that is, in equilibrium conditions phase 1 is stable, in a crystal containing imperfections the free energy of phase 1 may turn out to be higher than in phase 2, which causes the occurrence of a phase transformation.

From general considerations, the principles indicated must also be applied to the formation of austenite in the heating of steels, which gives grounds to expect not only variations of the kinetic parameters $\alpha \rightarrow \gamma$ of the transformation in objects with a non-equilibrium structure, but also shifts of the transformation temperature. This work is devoted to the study of this problem.

The basic material for the investigation was steel 20. The following variations of the initial state were selected: (1) hardening in water at 880°C; (2) annealing to lamellar perlite; (3) deformation by cold rolling ($\varepsilon \approx 50\%$) of the steel annealed to lamellar perlite; (4) powder filed from hardened steel.

USSR

VERSHIGORA, A. Ye., DYACHENKO, S. S., LISUNKINA, I. K., MORGUNOV, I. N., NOGACHEVSKIY, I. I., TEREKHOV, S. N., CHERNUSHENKO, Ye. F., and YAGUD, S. L., Editors, Ministry of Health, Ukrainian SSR

Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology. Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

Translation: Annotation: Articles included in the collection deal with the most pressing problems of theoretical and practical immunology, viz., mechanism of the formation of antibodies and immunological reactivity, allergy and clinical and experimental immunopathology, specific prophylaxis, and reactogenicity of vaccines and postvaccinal complications. Works aimed at devising methods of immunological investigations help to solve problems of modern immunology.

The previous four issues of this collection were published under the title of "Voprosy Immunologii" (Problems of Immunology).

The collection is of interest to scientific workers, practitioners of various specialties, and to senior students of medical institutes.

191 pages. 52 Russian articles with Russian abstracts.
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USSR

VERSHIGORA, A. Ye., et al., Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology. Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

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VERSHIGORA, A. Ye., et al., Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology. Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

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VERSHIGORA, A. Ye., et al., Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology. Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

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VERSHIGORA, A. Ye., et al., Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology. Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

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USSR

VERSHIGORA, A. Ye., et al., Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology. Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

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USSR

VERSHIGORA, A. Ye., et al., Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology. Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

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VERSHIGORA, A. Ye., et al., Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology. Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

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USSR

VERSHIGORA, A. Ye., et al., Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology. Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

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VERSHIGORA, A. Ye., et al., Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology. Republic Interdepartmental Collection), No 5, "Zdorov'ya," *Kiev, 1972*

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USSR

DYACHENKO, S. S., and KARAVANS'KA, N. O., Kiev Medical Institute, Kiev

"Comparative Characteristics of Some Immunobiological Reactions Under the Effect of ACTH and Prednisolone"

Kiev, Mikrobiologicheskiy Zhurnal, Vol 33, No 6, Nov/Dec 71, pp 777-778

Abstract: Rats were immunized by an injection of a 30 percent suspension of ram erythrocytes into the thigh of the left hind leg after intramuscular injections of ACTH in doses of 5 mg/100 g or prednisolone in doses of 5 units/100 g had been given to them for 6 days into the thigh of the opposite hind leg. The plasmacyte reaction in the left transverse, left inguinal, and left axillary lymph nodes was investigated after immunization. In a cell suspension prepared from the lymph nodes, the amount of antibody-producing cells was determined by local hemolysis in a gel. Under the effect of the antigen, the amount of cells of the plasmacyte series in the left transverse lymph node and to a lesser extent in the other two lymph nodes increased markedly in control animals not treated with either hormone, with the maximum count being reached on the 5th day after immunization. This increase was much less pronounced for rats treated with hormones; the number of cells of the plasmacyte series in the left transverse lymph node at the maximum on the 5th day

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USSR

DYACHENKO, S. S., and KARAVANS'KA, N. O., Mikrobiologicheskiy Zhurnal, Vol 33, No 6, Nov/Dec 71, pp 777-778

after immunization was reduced by a factor of 4.3 and 4.1 after treatment with ACTH and prednisolone, respectively, vs. that for immunized control animals not treated with either hormone. The variation in the number of antibody-forming cells in the lymph nodes corresponded to that in the number of cells of the plasmacyte series. The hemolysin and hemagglutinin titers of the blood serum changed in direct relation to the amount of antibodies that formed. In experiments in which rats were immunized by three injections of heated corpuscular typhoid vaccine, administration of ACTH or prednisolone for 6 days prior to immunization did not inhibit the antibody-forming activity of the lymph nodes. When the hormones were administered during the period of immunization, formation of antibodies was inhibited.

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1/2 030 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--INCOMPLETE RECRYSTALLIZATION STRUCTURES AND THEIR INFLUENCE ON THE PROPERTIES OF STEELS -U-
AUTHOR-(02)-DYACHENKO, S.S., FOMINA, G.A.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (1), 9-13

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METAL RECRYSTALLIZATION, MECHANICAL PROPERTY, ALLOY DESIGNATION, STEEL MICROSTRUCTURE, PLASTICITY, CARBON STEEL, LOW ALLOY STEEL, IMPACT TEST, ALLOY PHASE TRANSFORMATION/(U)20 LOW CARBON STEEL, (U)40 MEDIUM CARBON STEEL, (U)12KHMF LOW ALLOY STEEL, (U)20KH3MVF CHROMIUM STEEL, (U)14KHGNDF LOW ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1287 STEP NO--UR/0129/70/000/001/0009/0013

CIRC ACCESSION NO--AP0106068
UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106068

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RECRYSTN. OF THE STEELS 20, 40, 12KHMF, 20KH3MVF, AND 15KH1M1F IN THE INTERCRIT. TEMP. RANGE (AC SUB1 AC SUB3) WAS STUDIED. DIFFERENT COOLING RATES AND DIFFERENT METHODS OF STUDYING THE MICROSTRUCTURE AND MECH. TESTING WERE USED. COOLING FROM TEMPS. SLIGHTLY HIGHER THAN AC SUB1 GIVES MARTENSITE, WHICH LOWERS THE PLASTICITY AND THE IZOD IMPACT NOS. FOR ALLOY STEELS THIS IS OBSD. NOT ONLY AFTER HARDENING BUT ALSO AFTER SLOW COOLING FROM THE INTERCRIT. TEMP. RANGE. THE PROPERTIES OF INCOMPLETELY RECRYSTD. STEELS DEPEND ON THE DISTRIBUTION OF THE DISTRIBUTION OF THE PRODUCTS OF TRANSFORMATION OF AUSTENITE AND ON THE FORM OF THE UNRECRYSTD. FERRITE. FERRITE, WHICH *HAD NOT BEEN AUSTENITIZED IN THE INTERCRIT. TEMP. INTERVAL, SOFTENS BY* RECRYSTN. AND LOWERS THE MECH. PROPERTIES OF STEEL. PARTS OF STEEL, WHICH WERE HEATED IN THE INTERCRIT. TEMP. INTERVAL NEAR AC SUB1 HAVE LOW PLASTICITY, WHILE THOSE HEATED AT THE MIDDLE OF THIS INTERVAL ARE OF LOW STRENGTH.

UNCLASSIFIED

USSR UDC: 534.2

D'YACHENKO, V. A., FOMIN, V. M.

"Some New Approximations of the Chaplygin Function in a Subsonic Gas Flow Region"

Tr. Seminara po krayev. zadacham. Kazansk. un-t (Works of the Seminar on Boundary Value Problems. Kazan' University), 1970, vyp. 7, pp 122-128 (from RZh-Mekhanika, No 9, Sep 70, Abstract No 9B356)

Translation: Two new Chaplygin approximating functions are introduced, each containing five independent arbitrary constants. The solution of the corresponding system of gas dynamic equations in the plane of the velocity hodograph is taken in G. A. Dombrovskiy's form. A solution is given for the problem of determining compression of the jet flowing with subsonic velocity from a flat channel with a nozzle. G. I. Nazarov.

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D'YACHENKO, V. K.

Air cushion-vehicles

TECHNICAL TRANSLATION

FSTC-HT-23-496-71

ENGLISH TITLE: Basic Theories of Air Cushion Vehicles

FOREIGN TITLE: Osnovy Teorii Sudov na Vozdushnoy Podushke

AUTHOR: Yu. Yu. Penyaz, V. K. D'yachenko, et al.

SOURCE: [illegible] BASIC THEORIES OF AIR CUSHION VEHICLES

Translated for FSTC by Technicon

NOTICE

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USSR UDC: 621.791.72:669.293+669.292+669.14.018.8

VEYNIK, V. A., Engineer, D'YACHENKO, V. V., Candidate of Technical Sciences, and CHUKANOV, A. P., Engineer

"Electron-Beam Welding of Niobium Alloy and Stainless Steel Through a Vanadium Layer"

Moscow, Svarochnoye Proizvodstvo, No 5, May 73, pp 16-18

Abstract: The authors study the interaction kinetics of a solid niobium alloy and liquid stainless steel through a vanadium layer. The study was carried out in a chamber at a residual pressure of $5 \cdot 10^{-5}$mm Hg. The vanadium was applied from a melt by the vacuum condensation method onto the niobium backing surface which was first prepared by a mixture of acids, 40 percent HF+60 percent HNO_3. This ensures the satisfactory adhesion of the condensate to the surface. The specimen, consisting of stainless steel, vanadium layer, and niobium backing, was heated by an electron beam in order to approximate as closely as possible electron beam welding conditions. The heating temperature of from 1400 to 1550°C was regulated either by focus or electron flux variation. The results show that vanadium should be used in the electron beam welding of VN-2AE vanadium alloy and Kh18N10T stainless steel 0.5mm thick with only the steel being melted. The vanadium prevents the formation of an intermetallide layer in the fusion zone. In welding the indicated materials, a three micron thick vanadium layer makes

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VEYNIK, V. A., et al, Svarochnoye Proizvodstvo, No 5, May 73, pp 16-18

it possible to expand the welding current by a factor of three in comparison to welding without vanadium. Barrier elements should be selected on the basis of graphs for mutual solubility of elements in the solid state. Such graphs should be constructed for the individual components of weldable alloys.

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Welding

USSR

UDC 621.791.754:621.762(669.71)

OL'SHANSKIY, A. N., D'YACHENKO, V. V., Candidates of Technical Sciences, and NIKIFOROV, G. D., Doctor of Technical Sciences

"Arc Welding SAP Materials Under High-Pressure Inert Gas"

Moscow, Svarochnoye Proizvodstvo, No 7, Jul 73, pp 16-18

Abstract: SAP materials have poor weldability due to formation of pores during the welding process. Experiments were conducted to reduce the number of pores by varying the inert gas content and gas pressure. Gas contents used were (in $cm^3/100$ g): 16-18 for SAP-1, 6-8 for SAP-1a, and 1 for SAP-1s with pressures ranging from 0.2 to 11 atm. It was found that the tensile strength of the weld joint increases proportionately with increased atmospheric pressure. Although the SAP-1 base metal has a larger tensile strength than SAP-1a and SAP-1s, the weld joint strength of the latter two SAP materials is higher than that of SAP-1. At a pressure of 11 atm the tensile strength of SAP-1s is 85% of the base metal strength, SAP-1a is 89%, and SAP-1 is 66%. Thus, it is pointed out that SAP materials should not be vacuum welded. 4 figures, 1 table.

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USSR

UDC 621.791.72,001.5:669.293+669.14

SIVOV, YE. N., and D'YACHENKO, V. V., Candidates of Technical Sciences, Moscow Aviation Technological Institute

"Effect of the Electron-Beam Thermal Welding Cycle on Seam Formation and Properties of Niobium (VN-2AE) and Steel (Kh18N10T) Weld Joints"

Moscow, Svarchnoye Proizvodstvo, No 4, Apr 73, pp 11-13

Abstract: In modeling the process of welding by means of applying a drop of melted steel on the surface of solid niobium it was established that for formation of strong chemical bonds at the solid-liquid interface boundary without development of an intermetallide substrate it is required that the niobium heating temperature in the zone of contact with the molten steel be in the limits of 1100-1600°C for not more than several seconds of contact. In electron-beam welding, a similar cycle can be obtained in the case when the niobium heating source is the edge of the molten steel. In electron-beam welding it is necessary to place the steel so as to prevent its direct action on the niobium surface. From weld tests it was found that heating niobium with a thickness of 0.3-0.5 mm up to 1600° C and with a thickness of 0.5-1.0 mm up to 1500°C does not cause the formation of an intermetallide substrate. A satisfactory strength of the weld joints can be achieved if the substrate is absent or the average thickness of a discontinuous substrate does not

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USSR

SIVOV, YE. N., and D'YACHENKO, V. V., Svarochnoye Proizvodstvo, No 4, Apr 73, pp 11-13

exceed 2.0 microns. The types of joints and optimum welding process were determined which provide weld seams of a given shape and satisfactory properties. The boundary angle of a wetting for the crystallizing seam is the criterion for evaluating the weld joint quality, and a satisfactory strength of the joint occurs for wetting angles of 45-70°. Six figures, two tables, three bibliographic references.

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USSR

UDC 539.311

ANDREYEV, L. B., D'YACHENKO, V. YE., PROKOPALO, YE. F., Dnepropetrovsk State University

"The Stability of a Cylindrical Shell, Supported on an Elastic Base, During Axial Compression"

Kiev, Prikladnaya Mekhanika, Vol 8, No 2, Feb 72, pp 33-39

Abstract: An investigation is made of the axisymmetric stability of a longitudinally compressed cylindrical shell of arbitrart length with arbitrary boundary conditions, and a bilateralelastic base. The shape of the curved surface is not given in advance, but is calculated simultaneously with determination of the critical load. An algorithm is worked out for calculating the critical load and the form of stability loss for fastening and hinge support of the ends. Consideration is given to the limit case of an absolutely rigid base. The problem is solved in linear formulation by the method of dynamic programming. Results of tests made on steel shells with an inserted rigid cylinder are compared with the calculation data. Four figures, 1 table, 9 references.

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USSR

UDC 539.3.01

ANDREYEV, L. V., and D'YACHENKO, V. Ye., Dnepropetrovsk State University

"Concerning the Influence of an Elastic Base With Unilateral Connection Upon the Stability of a Cylindrical Shell"

Kiev, Prikladnaya Mekhanika, No 1, 1971, pp 31-37

Abstract: The article discusses the stability of a cylindrical shell, resting with its lateral surface upon an elastic base that is not connected with the shell and is externally situated with respect to it. The case of the action of a uniform external pressure is considered. The problem is solved in a linear formulation by the method of nonlinear programming with use of the known relationships of semizero-moment theory. Considered as an example is the problem of a semiring which is touched on the outside by an elastic base. 1 figures, 7 bibliographic entries.

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USSR

UDC 681.325.65

GARTSUYEV, V. M., and D'YACHENKO, YU. B.

"Increment Code Approximation Device"

USSR Authors' Certificate No 311265, Cl. G 06 f 5/00, G 06 j 1/02, filed 27 Oct 69, published 11 Oct 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, May 72, Abstract No 5B193P)

Translation: The proposed increment code approximation device contains a clock-pulse generator, a counter, a shift increment register, coincidence circuits, OR circuits, and a delay line. The device is distinguished by the fact that, to improve its dynamic properties, it includes a second counter, an indicator flip-flop, a control flip-flop, and a decoder. The clock-pulse line is connected to the control inputs of two coincidence circuits and the input of the second counter. The output of the first coincidence circuit is connected to the input of the information shift in the increment register. The output of the second circuit is connected to the units input of the control flip-flop, the units output of which is connected to inputs of the third and fourth coincidence circuits. The output of the third coincidence circuit is connected to the units input of the indicator flip-flop. The output of the fourth coincidence circuit is connected through one of the OR circuits to the

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"zero" input of the shift increment register. The output of the fifth coincidence circuit, whose control inputs are connected to the "zero" outputs of the digits of the first counter, is connected to the units input of the low-order digit of the shift increment register. The outputs of the digits of the second counter are connected through the decoder and the other OR circuit to the input of the first counter. The zero inputs of both counters, the flip-flops, and the shift increment register are connected to the scale factor signal line.

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TITLE--ENZYMATIC AND FUNCTIONAL TESTS IN PATIENTS WITH MECHANICAL JAUNDICE BEFORE AND AFTER THE OPERATION -U-

AUTHOR--DYACHINA, YE.G.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN PATIENTS WITH MECHANICAL JAUNDICE BEFORE AND AFTER THE OPERATION FOR THE ELIMINATION OF OBSTRUCTION THE AUTHRO INVESTIGATED THE FOLLOWING BLOOD SERUM ENZYMES, GLUTAMINOOXALOACETIC AND GLUTAMINOPYRUVIC TRANSAMINASES, PSEUDOCHOLINESTERASE, SORBIC DEHYDROGENASE, GUANASE, ALKALINE PHOSPHATASE AND A NUMBER OF FUNCTIONAL TESTS. BEFORE THE OPERATION THERE WAS NOTED THE DEVELOPMENT OF THE SYNDROME OF CYTOLYSIS, INFLAMMATORY AND THE SYNDROME OF HEPATOCELLULAR INSUFFICIENCY OF THE LIVER. AFTER OPERATIVE INTERVENTION TOWARDS THE SECOND-THIRD WEEK THERE WAS A DISAPPEARANCE OF THE CYTOLYSIS, EWAKENING OF THE CHOLESTATIC SYNDROME, IN PRESERVED INFLAMMATORY AND HEPATOCELLUALR INSUFFICIENCY SYNDROMES, THIS POINTING TO THE RESTORATIVE EFFECT ON THE LIVER OF THE OPERATION FOR THE ELIMINATION OF OBSTRUCTION IN PATIENTS WITH MECHANICAL JAUNDICE. DETERMINATION OF THE BLOOD SERUM ACTIVITY OF GUANASE AND PAUEDOCHOLINESTERASE MAY BE USED FOR THE DIFFERENTIAL DIAGNOSIS OF MECHANICAL JAUNDICE OF BENIGN AND MALIGNANT ETIOLOGY. A SIGNIFICANT POSTOPERATIVE REDUCTION IN THE PSEUDOCHOLINESTERASE ACTIVITY IN PATIENTS WITH MECHANICAL JAUNDICE IS OFTEN PRECEDED BY HEPATIC COMPLICATIONS.

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TITLE--CALCULATION OF THE FLUIDIZED BED LEACHING OF ZINC SINTERS WITH CONSIDERATION OF MIXING OF THE SOLID PHASE -U-

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